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BREEDING HABITS OF THE FISH HAWK ON  
PLUM ISLAND, NEW YORK.

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(*With Plates IV and V.*)

EVEN the wildest and most independent of our feathered friends rarely fail to show a proper appreciation of our demonstrations of kindness and good-will toward them. Wherever thorough protection is afforded to both them and their young during the breeding season their confidence in our good intentions is simply wonderful, and we are trusted as soon as we have conclusively shown ourselves to be worthy of their confidence. They quickly learn when and where safety is to be found and whom to trust or fear. The German Stork is exceedingly wild and cautious in the fields, woods, and along the river marshes, yet confidently builds its nest upon the housetops and churches in the villages and towns, and often struts about the dooryards. In Germany it has taken centuries to bring about this result; but I know of an island, less than one hundred miles from New York, where Fish Hawks, prior to 1885, had been protected for over thirty years, and where they were almost as tame as the German Storks. In this year Plum Island (the island in question) was sold to a syndicate who planned the construction of large hotels and cottages; since then all has completely changed. For about forty years Plum Island had belonged to the Jerome family, and the Fish Hawks had been protected and in every way encouraged to occupy the island as a nesting place.

I paid my first visit to this island home of the Fish Hawks in May, 1879. It was then owned, with the exception of an acre or two around the lighthouse, by Mr. Jerome, then an old man, whose main hobby and object in life seemed to be the protection of his pets and 'mascots,' the Fish Hawks and their nests, even to the extent, it was reported, of using a shot gun or rifle if necessary. He claimed that fully two thousand nightly roosted on the island, and that over five hundred nests had been built there. I finally reduced these numbers one half. At last I won him over, with good cigars, a thorough appreciation of his pets, and various other more powerful arguments, until he finally gave me permission to investigate their nesting habits on his island.

At this time on nearing the island, even while ten or fifteen miles away, one was struck with the number of Fish Hawks that were to be seen on all sides, and they became more and more numerous as the island was approached. All the way down Gardiner's Bay they were seen sailing through the air in every direction, or perched on the stakes of the fish pounds.

The island is three miles long, east and west, narrow and high to the eastward, broadening to the westward, where is a lighthouse on a high bluff or sand cliff. To the south of this a rolling sandy meadow extends for a mile, some parts of which are nearly level and others, especially near the beach, form a series of sand hills. Near the center of the island, to the westward, is a swamp, partly clear water, partly boggy and overgrown with bushes, across which was a much used causeway, called Love Lane. Near the swamp, and almost enclosed by it, was a piece of woodland of perhaps twenty acres in extent. The north shore of the island is high sand cliffs, with great boulders, ten to forty feet high, on the beach and out in the water. The south side is lower.

The first Fish Hawk's nest shown to me by Mr. Jerome was fairly in his dooryard, close by his front gate, and only about fifty yards from his house. It was placed upon an old pile of fence rails, rotted to black mould in the center, but kept up by the yearly addition of fresh rails. Mr. Jerome said that to his knowledge this nest had been occupied every year for forty years. It likewise had been added to yearly until its bulk of sticks, sods, cow dung, decayed wood, seaweed, etc., would amount to at least three cartloads, in addition to what had rotted and fallen to

the ground. The nest was only seven or eight feet from the ground, so that by stepping on a projecting rail I could readily see the three beautifully spotted eggs within, which I promised not to disturb. Mr. Jerome could pass close to the pile of rails without the birds leaving the nest, while I could not get nearer than thirty or forty feet. They would dive down near my head, uttering a shrill cry, and at the same time threateningly stretching out their claws; and while flying nervously about they constantly uttered a sound resembling the call of a young chicken or turkey when lost from its mother. They would alight on the nest again before I was fifty yards away.

Out on the sandy meadow to the southward were what at a distance appeared to be two gigantic mushrooms about seventy-five yards apart. A nearer approach disclosed the fact that they were cedar trees twenty feet high; the trunks were about one foot in diameter and without a limb for the first ten feet. The whole top of each tree was involved in a huge nest. These nests, Mr. Jerome said, had been occupied every year for forty years, each year the Hawks repairing them and adding to their bulk. These nests were so unusually large that they are worthy of description. Each nest involved the whole tree, even to the lowest branches. At the base loose sticks, six to twelve feet in length, were spread out so as to form a projecting platform ten to fifteen feet in diameter, forming complete protection from below. The base of the solid portion of the nest was about eight feet across, sloping up to the level top, which was about four feet across, and very firm and solid, and readily bearing my weight. The bulk of this nest was about equal to three cartloads. The central part of the nest consisted of a mass of sand and decayed matter from the old nests, much of which had fallen through to the ground. The base of the nest consisted of long sticks, oyster stakes, etc., loosely put together and extending beyond the longest limbs of the tree, making it over twelve feet in diameter. Each year for many years the nest had been repaired and built up with every kind of material that had been washed ashore or could be picked up in the fields. The center of the nest, nearly five feet high, was composed of clods and sand and the decayed remains of material added many years before. The sloping edges of the nest showed its composition to be of rough sticks, some of them quite long, rope, barrel staves, pieces of net floats, corks from seines, seaweed, kelp, long

strings of the eggs of the conch, an old rake, a blacking-brush, part of an oar, a toy boat (schooner) foremast and sail with jib still attached; boards from boxes, an old used-up broom, a small board with a fish line wound on it and fish hooks still attached; corn stalks with roots and earth adhering; large masses of sod with *growing* grass as turned up by the plow; many long bones and ribs of sheep and cattle from the hill pastures; large quantities of cow dung, and, strangest of all, bleached skulls of sheep on the top of the nest, apparently placed there, on account of their whiteness, for purpose of ornamentation; a shoe, pieces of sail and clothing, etc.; in short, everything that could be found on the beach, in the fields, or about the dooryard was included. The trees were overweighted and ready to fall, and in 1885 I found both overturned and new nests built upon the old ones that had fallen. (One of these is shown in Plate V.)

The birds were so tame that they would not only alight but settle down on one of the nests while I was examining the other. The parent bird showed little fear and continued to swoop down at me in a menacing way while I was on the top of the nest. The nest proper was about four feet across, nearly level, with a depression in the center six inches in diameter and about three inches deep, lined with seaweed, dry grass, sheep's wool and feathers.

In the wooded part of the island the nests were very numerous, the larger trees in the interior being all occupied, while near the edge of the wood nearly every tree had a nest, and some of them two or three each. On the outer edges of the wood and out in the open land were isolated low scrub-oak and thorn trees, which also were used for nesting sites, the nests in such instances being not over five to ten feet from the ground. Some of them I could see into readily from the ground; and if I waited patiently for half an hour the birds would alight on the nests within thirty feet of me. One of these nests contained an old broken axe which had been noticed by Mr. Franklin Benner two years before, a boot-jack and an old straw hat.

Back of these woods was a sheep barn, on the roof of which, at the south end, was a bulky Fish Hawk's nest, which I examined in 1879. By Mr. Jerome's request it was entirely destroyed in 1881, but I found it rebuilt in 1885. The barn was in constant use. Near it was a small wild cherry tree on which was a small nest. It was occupied each year I saw it.

Out on the sandy plain to the south of the woods, and south-east of the lighthouse, were one hundred or more nests built on the ground. Some were on the tops of the sand hills at the water's edge, others in the valleys or on the ridges. Those on the low ground were usually placed very close to some stake, a dead tree or stump, or even piece of timber from an old wreck. Some of the nests in the valleys were mere depressions in the sand, like a Gull's nest, near a post or stake, with a few feathers or straws in or near it, and a few sticks and bones scattered around. These were new nests. Other old nests on the ground were four to five feet high, having been added to yearly by the birds, and by loose sand blown into them by storms. In some instances the nests had caught the sand year after year, while the sticks, etc., had rotted until there remained apparently simply a cone some three or four feet high, level at the top, which had a breadth of two and a half to three feet, with a depression in the center, in which some grass was growing, while sticks, bones, etc., were scattered around its edges. Some of the newer nests were found only by the bird flying up from them as I approached, the nest being merely a small hollow in the sand.

On the north shore, where the beach is strewn with large boulders, nearly every large rock — even some that were far out in the water — was occupied with a small nest. The waves breaking over these rocks during heavy storms, the nests were frequently washed away, thus preventing any large accumulation of materials. In photographing some of these nests I secured a view of one with the bird flying over it, and another view of the same nest when the bird had just alighted on it. This was a large nest, situated on a boulder nearly forty feet high. In both instances the bird came out well in the photograph. It was almost impossible to reach this nest, but I finally succeeded in getting to it, the Hawks meanwhile darting within three or four feet of my head, thrusting out their claws towards me in a threatening manner as they fairly brushed me with their wings. The eggs were found to be protected in a singular manner, being covered and nearly concealed by a Crow's wing, the owner of which had not been killed over forty-eight hours. This nest was out of the reach of the waves and very bulky, with a deep depression in the center. It was comparatively safe from attack from below, but exposed from above. I have no evidence that the Hawks had

killed the Crow and placed the wing in the nest as a warning to the many marauding Crows which visited the island daily to rob the nests of the Night Heron and other birds breeding there. Indeed, I found a few Hawks' nests that had been robbed, but no Crow had molested this one.

In the swamp near the Fish Hawks' nests was a colony of Night Herons, nesting in the smaller trees near the swamp. Almost daily a flock of Crows from Connecticut were accustomed to rob this heronry, covering the ground with the shells of the eggs they had eaten, and occasionally treating a few Fish Hawks' nests in the same way. The Fish Hawks seemed to unjustly accuse the Herons of the robbery, as the Herons were constantly persecuted by the Hawks. Whenever a Heron appeared he was instantly set upon by one or more of them, and the Herons would seek safety in the thick underbrush where the Hawks could not follow them. Herons were killed, however, almost daily by the Hawks.

The lighthouse keeper gave the date of the arrival of the Fish Hawks as early in April, the time varying but a few days from year to year, the males coming first, followed two or three days later by the females. I always found that by June 21 most of the nests had their full complement of eggs, and some sets were more or less incubated. The number in the set varied from one to four, usually numbering two or three, though I once found five. The eggs also vary greatly in color; some are of an almost uniform dark chocolate brown, varying in places to brownish black. In most instances the ground color was a creamy or bluish green, thickly spotted and blotched with various shades of purplish brown and dark chocolate brown, the latter prevailing about the larger end. Certain nests had the local reputation of always having one or more white eggs in them. In 1879 I found a nest in a high oak containing one so-called white egg. In 1881 I found in the same nest two white eggs and one that was beautifully mottled. In each instance the Fish Hawk was found on the nest. I have found nests with one white egg and two of the usual coloration; also one nest (in a tree) where all three eggs were without trace of any markings. The parent bird had been incubating the set for a week and was often seen on the nest. I also bought a set of three unmarked eggs taken from the same nest the previous year.

On approaching some of the nests the old birds silently left them

and did not return till all was quiet, simply soaring high in the air without uttering a sound; in other cases the birds were noisy and combative, constantly darting down at one's head, but they would return to their eggs when I remained quiet, even if only fifty feet away.

The Fish Hawks were not lacking in neighbors willing to share with them their domicile. A pair of Fish Hawks of my acquaintance occupied a nest situated on the bank of a very sluggish stream at the edge of the piece of wood already described, and adjoining a denser thicket to the westward. The nest was old and large, and was probably an inheritance from former generations. It was thoroughly protected from below by the long projecting sticks at the base and the imperviousness of the mass. A pair of Herons, wiser than their kin, built their nest under the Fish Hawk's nest, only some fifteen inches below it, and in a place the Fish Hawks could not possibly reach without tearing away a portion of their own nest. The Heron's nest was thus thoroughly protected from storms and from hostile attack from above. The Fish Hawk's nest contained three eggs, the Heron's four eggs. In the crevices of this same Fish Hawk's nest were five nests of the Purple Grackle, one Wren's nest, and an English Sparrow's nest. Herons are often killed by Fish Hawks, but they could not get at these, and when I robbed the whole series of nests, they all laid again in the same nests and were allowed to raise their young. In fact, the Fish Hawks do not seem to mind being robbed, as they will not desert their nests if allowed to raise their brood during the season. They seemed much bolder in open places and along the rocky shore than in the woods, as in exposed situations they could better see the character of their enemy.

In every Fish Hawk's nest, except those on the ground, I always found from two to eight or ten nests of the Purple Grackle. They were situated in crevices among the sticks under the edges of the nest, or even beneath the nest itself, so as to secure protection from rain and bad weather. They were very bold in collecting fragments from the table of their powerful neighbors. English Sparrows also often bred there, and I have more than once found nests of the House Wren in the deeper interstices.

The two plates accompanying the present article are from photographs selected from a considerable series, taken on the

island, of Fish Hawks' nest and their surroundings. Plate IV represents a nest situated in an old and partly dead oak at the edge of the woods and overhanging a fresh water pond. In taking the picture the camera was hidden near the tree and a long line attached, the exposure being made just as the Hawk had settled upon the dead top of the tree a little above the nest. The birds were comparatively tame, and a number of fairly good photographs were obtained of both nests and birds.

Plate V represents one of the two 'mushroom' nests already described, taken after the great weight of the nest had overturned the tree. The tree fell in October, 1883. The birds rebuilt upon the fallen nest in 1884, and had added to it new materials when again examined in 1885.

As already said, the Fish Hawks were thoroughly at home on the island for a long period prior to the time when the island was sold by Mr. Jerome to the syndicate, and had become very unsuspecting. I have seen them alight on the flagpole and on the fence posts within easy gunshot of the lighthouse; and on two occasions visitors to the lighthouse are said to have killed one of the birds with a stone. As stated above, the nests were placed almost anywhere—on the tops of the highest trees, or on their lowest branches, only five or six feet from the ground; on stunted trees only a few feet in height, on isolated trees far out in the open land, as well as in the woods; on the sheep barn, and on an old pile of rails by the gate of the farm house; while thirty to forty per cent were actually on the ground. These latter varied from a slight depression in the ground, as in the case of newly formed nests, to conical mounds, four or five feet high, formed by materials added year after year by the birds, filled in with sand blown by the winds. High rocks on the shore, and low rocks far out in the water, scarcely above high tide and swept by the autumn storms, were also chosen as situations for nests. A large buoy, with a lattice-work top, near the west end of Fisher's Island, was also occupied for many years by a nest of these birds, greatly to the advantage of sailors and fishermen, who were warned in thick weather of the position of the buoy by the screaming of the Fish Hawks.

The Jeromes, father and sons, rigidly protected the Fish Hawks as long as the island remained in their possession, it being generally understood [that any one attempting to rob their

nests did so at the peril of his life. They even destroyed the rookery of Night Herons, because it attracted gunners to the island, to whom a Fish Hawk sailing over often presented a shot too tempting for them to resist. Since the sale of the island, and the removal of protection, the Fish Hawks have for the most part gone elsewhere, few now breeding there. Gardiner's Island, still thoroughly protected, is now their favorite breeding place.

The varied character of the materials used in nest-building has already been mentioned at some length, but I append the following more detailed list, made up from notes taken during my three visits to the island, the objects mentioned having all been personally observed and noted: sticks, branches of trees, from three to five feet long, a few ten to twelve feet long, for protecting the base of the nest; brushwood, barrel staves, barrel heads, and hoops; bunches of seaweed, long masses of kelp, mullein stalks and cornstalks; laths, shingles, small pieces of boards from boxes; parts of oars, a broken boat-hook, tiller of a boat, a small rudder, and parts of life preservers; large pieces of fish nets, cork, and cedar net floats, and pieces of rope, some of them twenty feet in length; charred wood, sticks from hay bales, and short, thick logs of wood; a toy boat, with one sail still attached; sponges, long strings of conch eggs, and eggs of sharks and dogfish; a small axe with broken handle, part of a hay rake, old brooms, an old plane, a feather-duster, a deck swab, a blacking-brush, and a bootjack; a rubber boot, several old shoes, an old pair of trousers, a straw hat, and part of an oil skin 'sou'wester'; a long fish line, with sinkers and hooks attached, wound on a board; old bottles, tin cans, oyster shells, and large periwinkle shells, one rag doll, shells and bright colored stones, a small fruit basket, part of an eel pot, a small worn out door mat; wings of ducks and gulls, sometimes with parts of the skeleton attached, and one fresh crow's wing, as already related. A strange feature was the frequent presence of *bleached bones* from the pasture, as the ribs and long bones of sheep and cattle, and especially *sheep skulls*. Nearly all the old nests had masses of dried cow dung, and large pieces of sod, with the grass still growing.